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10/772,478	02/05/2004	Barry Linkert	1578.197 (10879-US-PAT)	4973
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)
	10/772,478	LINKERT ET AL.
	Examiner Jacob F. Bétit	Art Unit 2169

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 29 October 2009.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-14 and 21-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-14 and 21-26 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/1648)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____

5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 29 October 2009 has been entered.

Remarks

2. In response to communications filed on 29 October 2009, claims 1, 6, and 21 have been amended; claims 15-18 and 20 has been cancelled; and claims 22-26 have been added per the applicant's request. Claims 1-14 and 21-26 are presently pending in the application.

3. In the Remarks section of the applicant's response, the applicant indicates that there is support in the specification and then points to paragraph numbers. If the applicant wants to point to sections of the specification, the applicant should point to page and line number since there are no paragraph numbers found in the specification as filed.

Claim Objections

4. Claims 21-26 are objected to because of the following informalities:
Claims 21 and 22 do not use a conjunction to combine the recited steps together.
Therefore it is not clear if the applicant meant for the steps to be aggregated or to be in the

recited in the alternative. For the purposes of examining, it will be assumed that the steps were meant to be combined together with the conjunction --and--.

Claims 23-26 are objected for because they depend from objected to claim 21.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-14, 21, 22 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yianilos et al. (U.S. patent application publication No. 2002/0029214 A1) in view of McCullough (U.S. patent No. 7,054,618 B1).

As to claim 1, Yianilos et al. teaches an apparatus for a radio communication system having a network part that maintains a network-copy of a first database containing data and a mobile node that maintains a mobile-copy of the first database containing data (see paragraph 0080, “two databases are not located on the same processor” and “limited bandwidth link”), the first database being comprised of a plurality of records, a record being comprised of a plurality of fields, each field being populated with data, the data of the network-copy and data of the mobile-copy of the first database, corresponding when the data in the network-copy of the first database and the data in the mobile-copy of the first database match one another, said apparatus for altering the data of at least one of the network-copy and the mobile-copy of the first database

to place the network-copy and the mobile-copy in match with each other (see paragraphs 0005-0007, "synchronization" and "synchronizable database D is a set containing records of the form (key, value)", said apparatus being embodied at the mobile node and comprising:

a request detector, the request detector capable of detecting requests for hash information and requests for data records (see paragraph 0083 "Get_Interval_Hashes"; "Get_All_Hashes"; and paragraph 0081, "records are transferred which need to be transferred to make the databases synchronized");

a hash generator coupled to the request detector and receiving there from, requests for hash information, said hash generator capable of forming first and second hash values of data received by said hash generator from the first database, the hash generator generating a first hash value that is computed over the first database responsive to a first request received by the hash generator from the request detector, the first hash value being formed for communication to the network part to determine whether the network-copy and the mobile-copy are in match with one another (see paragraph 0083, "a single summary of all records lying in the given key interval" where the key interval could include all keys in the database and "Get_Interval_Hashes"), said second hash value being computed over an individual record of the first [database] and communicated to the network part, after said first hash value has been computed and communicated to the network part and used by the network part to determine that the network-copy and the mobile-copy are not in match with one another the second hash value being generated by the hash generator responsive to the receipt by the request detector of a second request for additional hash information, a second request for additional hash information being received by the request detector only if the mobile copy of the first hash value does not

match the network copy of the first hash value (see paragraph 0083, if the summaries do not match and only a small number of records are in the key interval “then digests for all those individual records are transferred from the remote to the local side” and “Get_All_Hashes”); and a content retriever coupled to said request detector, said content retriever retrieving data records from the mobile-copy of the first database responsive to requests received by said content receiver from the request detector, data records retrieved by said content retriever for communication to the network part, and used by the network part to synchronize the network-copy and the mobile-copy to each other (see paragraph 0081, “only those records are transferred which need to be transferred to make the databases synchronized”).

While Yianilos et al. teaches a limited bandwidth connection (see paragraph 0080), Yianilos et al. does not distinctly disclose receiver circuitry, capable of receiving radio signals or the request detector being coupled to the receiver circuitry. Yianilos et al. also does not disclose wherein the first database is implemented in an extensible mark-up language (XML) format.

McCullough teaches receiver circuitry, capable of receiving radio signals and request detector being coupled to the receiver circuitry (see figure 1, reference numbers 107A, 107B, 108A, 108B, and 108C and see column 5, lines 3-15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Yianilos et al. to include the teachings of McCullough because these teachings would allow databases on a cellular telephone to be synchronized with a database across a network.

McCullough also teaches the first database is implemented in an extensible mark-up language format (see column 5, lines 16-29). Therefore, it would have been obvious to one

having ordinary skill in the art at the time of the invention to have modified Yianilos et al. to include this because it would allow mobile devices to use XML data to store and display data.

As to claim 2, Yianilos et al. as modified teaches wherein said hash generator generates the first hash values responsive to an external triggering event, occurrence of which is detectable at the mobile node (see Yianilos et al. paragraph 0083).

As to claim 3, Yianilos et al. as modified teaches wherein said hash generator generates the second hash values responsive to an external triggering event, occurrence of which is detectable at the mobile node (see Yianilos et al. paragraph 0083).

As to claim 4, Yianilos et al. as modified teaches wherein said hash generator generates the first hashes upon detection of an external triggering event, the occurrence of which is detectable at the mobile node and wherein said hash generator generates the second hashes responsive to a network part determination that the first hashes, generated by said hash generator did not match a first hash generated by the network part (see Yianilos et al. paragraph 0083).

As to claim 5, Yianilos et al. as modified teaches wherein the data maintained at the network-copy and the mobile-copy of the first database is comprised of data records, each data record being comprised of fields including at least a first key field and at least a first record field, and wherein the second hashes selectively generated by said hash generator are formed of values

of the at least the first key field (see Yianilos et al. paragraph 0069).

As to claim 6, Yianilos et al. as modified teaches wherein the determination that the network-copy and the mobile-copy are out of match is made responsive to values of the second-type hashes formed of the values of the at least the key field (see Yianilos et al. paragraphs 0069 and 0083).

As to claim 7, Yianilos et al. as modified teaches wherein the data retrieved by said content retriever comprises both the at least the first key field and the at least the first record field (see Yianilos et al. paragraphs 0069).

As to claim 8, Yianilos et al. as modified teaches wherein the network part comprises:
a determiner embodied at the network part and which receives hash values generated by said hash generator embodied at the mobile node, said determiner determining whether the hash values generated by the hash generator at the mobile node, match with corresponding hash values generated at the network part (see Yianilos et al. paragraph 0083); and

a requestor coupled to said determiner and receiving indications that a hash value from the mobile node does not match a corresponding hash value generated at the network part, said requester requesting from the mobile node, additional information associated with the mobile-copy of the first database (see Yianilos et al. paragraph 0067).

As to claim 9, Yianilos et al. as modified teaches wherein the hash values generated at the network part include said first hash value and said second hash value (see Yianilos et al. paragraph 0067 and 0083).

As to claim 10, Yianilos et al. as modified teaches wherein the additional information requested by said requestor comprises a request for the mobile node to deliver the second hash value to the comparator (see Yianilos et al. paragraph 0083).

As to claim 11, Yianilos et al. as modified teaches wherein the data maintained at the network-copy and the mobile-copy of the first database is comprised of data records and wherein the additional information requested by said requestor comprises a request for the mobile node to deliver at least portions of the data records (see Yianilos et al. paragraph 0067).

As to claim 12, Yianilos et al. as modified teaches further comprising a comparator receiving from the mobile node, data records or portions thereof and adapted to compare data records or portions thereof from the mobile node, to corresponding values of the network-copy of the first database (see Yianilos et al. paragraphs 0081-0082).

As to claim 13, Yianilos et al. as modified teaches further comprising a database value updater coupled to said comparator, said database value updater being responsive to comparisons made by said comparator to alter at least one data record of a selected one of the mobile-copy

and the network-copy of the at least the first database (see Yianilos et al. paragraph 0067).

As to claim 14, Yianilos et al. as modified teaches wherein said database value updater operates pursuant to a selected conflict resolution protocol (see Yianilos et al. paragraph 0082).

As to claim 21, Yianilos et al. method for synchronizing a database on a network with a database on a mobile node, the method comprising:

creating first hash information pursuant to a first technique, the first hash information being representative of values contained in the mobile node's database (see paragraph 0083, "Get_Interval_Hashes");

communicating the first hash information to the network node (see paragraph 0080, "two databases are assumed to be located on different processors connected via a limited bandwidth link");

receiving at a request detector coupled to receiver circuitry of the mobile node a request from the network for second hash information when the network determines, based at least on the first hash information, that the database on the network and the database on the mobile node are out-of-match (see paragraph 0083, "Get_All_Hashes"); [and]

creating the second hash information pursuant to a second technique (see paragraph 0067 and 0083); [and]

wherein the first technique is less computationally-intensive than the second technique and the first hash information requires less communication channel capacity than the second hash information (see paragraph 0083, where computing one hash for a plurality of records

requires less computation and communication bandwidth than computing a hash for each record individually).

Yianilos et al. does not distinctly disclose extensible markup language (XML) databases on the network or on the mobile node.

McCullough teaches this, see column 5, lines 16-29. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Yianilos et al. to include the teachings of McCullough because these teachings would allow for the use of XML to store and access data on the mobile devices.

Yianilos et al. still does not distinctly disclose a plurality of databases, but this is simply a multiplication of parts. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have multiple databases to provide areas for storing different types of information since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. Alternatively, Yianilos et al. teaches synchronizing based on a range of memory addresses which can be a single file or a raw disk environment. When synchronizing based on memory addresses, it would be obvious multiple databases (XML files) that are stored in the memory blocks of a mobile device would be synchronized (see paragraphs 0014-0016).

As to claim 22, Yianilos et al. teaches a method comprising:

generating first hash information based upon first data contained in one or more databases maintained at a mobile node in response to a synchronization trigger, the first hash information comprising a hash of one or more key fields of a record of the one or more databases

and a hash of one or more record fields of the record (see paragraph 0083 and see paragraph 0013, periodically the synchronization is triggered);

communicating the first hash information (see paragraph 0083);

being delivered a request for second hash information when the first hash information is indicative of a mismatch condition (see paragraph 0083, partition the key range into smaller intervals, *Get_Interval_Hashes* function);

forming the second hash information in response to the request (see paragraph 0083);

being communicated a fetch request from the second hash information is indicative of a change to data of which the second hash information is representative (see paragraph 0085);

returning third data as requested in the fetch request (see paragraph 0081).

Yianilos et al. does not distinctly disclose communicating by an air interface.

McCullough teaches communicating by an air interface (see figure 1, reference numbers 107A, 107B, 108A, 108B, and 108C and see column 5, lines 3-15). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Yianilos et al. to include the teachings of McCullough because these teachings would allow databases on a cellular telephone to be synchronized with a database across a network.

As to claim 24, Yianilos et al. as modified, teaches where in first hash information is based upon first data contained in two or more databases maintained at the mobile node (see Yianilos et al., paragraph 0016, “single, preallocated file or in a raw disk environment”).

As to claim 25, Yianilos et al. as modified, teaches further comprising generating a synchronization trigger at the mobile node (see paragraph 0013).

As to claim 26, Yianilos et al. as modified, teaches further comprising being delivered a synchronization trigger (see paragraph 0013).

7. Claims 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yianilos et al. (U.S. patent application publication No. 2002/0029214 A1) in view of McCullough (U.S. patent No. 7,054,618 B1) as applied to claims 1-14, 21, 22, and 24-26 above and in further view of Boyle et al. (U.S. Patent No. 6,138,158).

As to claim 23, Yianilos et al. as modified, does not distinctly disclose wherein the fetch request is piggybacked with second data for the mobile node.

However, Boyle et al. teaches this, see column 16, lines 55-65. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified Yianilos et al. to include the teachings of Boyle et al. because this would reduce the number of messages that need to be sent back and forth between devices.

Response to Arguments

8. Applicant's arguments with respect to claims have been considered but are moot in view of the new grounds of rejection.

In response to the applicant's arguments that the cited references "apply only to relational databases", the arguments have been considered, but are not deemed persuasive. In at least one embodiment of Yianilos et al. hashes are computed based on ranges of blocks. Synchronization based on ranges of blocks would be database or file independent. Further, McCullough teaches the use of XML files to store devices in a mobile environment. Therefore, the combination of references would make the claimed invention obvious to one having ordinary skill in the art at the time of the invention.

In response to the applicant's arguments that the newly added claims are on a "per-record" bases, the arguments have been considered, but are not deemed persuasive. However, claim 22 states "first hash information comprising a hash of one or more key fields of a record of the one or more databases and a hash of one or more record fields of the record". Since the claim says "one or more" it is possible that the multiple records are included in the hash at once.

9. In response to the applicant's arguments that "the new claims recited that the requested data goes across multiple databases on the handheld or mobile device", the arguments have been considered, but are not deemed persuasive. It is noted that the features upon which applicant relies are not recited in the rejected claims. Although the claims are interpreted in light of the

specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob F. Bétit whose telephone number is (571)272-4075. The examiner can normally be reached on Monday through Friday 9:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tony Mahmoudi can be reached on (571) 272-4078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

/Jacob F Bétit/
Examiner, Art Unit 2169

jfb
3 Jan 2010